

Each of claims 1 and 10 specifically requires that only the first insulating solder resist protective film covers the metal-wiring-pattern and the through hole on the metal-wiring-pattern side. For example, referring to Figure 1 of the instant application, only solder resist film 30 covers the wiring pattern and slits 25 on the metal-wiring-pattern side. Claim 1 further specifies that no insulating protective film other than the first insulating protective film covers the metal-wiring-pattern and through hole on the metal-wiring-pattern side.

In direct contrast to the inventions of claims 1 and 10, prior art Figure 7 utilizes two solder resist films 110 and 111 on the wiring pattern side of through hole 105. Thus, claim 1 cannot possibly be met by Figure 7. In fact, Figure 7 teaches directly away from the instant claimed invention by requiring two separate solder resist films. Moreover, the structure of Figure 7 is problematic because epoxy solder resist 110 is very hard (young's modulus of  $380 \text{ kgf/mm}^2$ ); thus rendering Fig. 7 inferior to the invention of claim 1 (i.e., resist 110 has a young's modulus much higher than the range required by claim 1). The problems with this are discussed at length in the instant specification.

Figure 9 of the instant application illustrates only a single solder resist film 123 on the wiring pattern side of the slits. However, this solder resist film 123 has much too high of a young's modulus (i.e.,  $200 \text{ kgf/mm}^2$ , as specified at page 6 of the instant application). This young's modulus value of resist 123 is significantly outside the range of  $5\text{-}70 \text{ kgf/mm}^2$  specified in claim 1. The problems associated with prior art Figure 9 are discussed at length on page 6 of the instant application, as is its resulting inferiority.

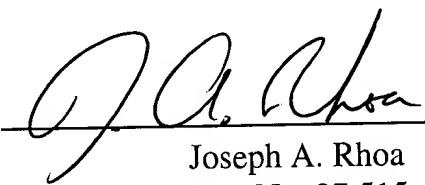
Accordingly, Figure 9 cannot meet the invention of claims 1 and 10 because the young's modulus of resist 123 in Figure 9 is much too high.

Citation to additional art cannot overcome the fundamental flaws associated with prior art Figures 7 and 9 discussed above.

For at least the foregoing reasons, it is respectfully requested that all rejections be withdrawn and the application passed to issue. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:   
Joseph A. Rhoa  
Reg. No. 37,515

JAR:caj  
1100 North Glebe Road, 8th Floor  
Arlington, VA 22201-4714  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS**

Please cancel claims 20-22, without prejudice in view of the Restriction Requirement.

Please amend the following claims:

1. (Amended) A tape carrier package semiconductor device, which has a tape carrier and semiconductor elements that have been packaged on the tape carrier, [characterized in that] said tape carrier package semiconductor device comprising [comprises]:

an insulating tape,

a metal wiring pattern installed on one surface of the insulating tape,

a through hole that is provided in a manner so as to penetrate the insulating tape so that the insulating tape is allowed to bend,

only a first insulating protective film for insulating and covering the metal wiring pattern and the through hole on the metal-wiring-pattern side, [and]

a second insulating protective film for insulating and covering the through hole on the side opposite to the metal-wiring-pattern side, and

resin sealing peripheral portions where the metal wiring pattern and a semiconductor element are connected;

wherein the first and second insulating protective films are made of solder resist whose young's modulus is in the range of 5 kgf/mm<sup>2</sup> to 70 kgf/mm<sup>2</sup>, and wherein no

insulating protective film other than said first insulating protective film covers the metal wiring pattern and the through hole on the metal wiring pattern side.

10. (Amended) A liquid crystal panel display, which is provided with a liquid crystal panel and a tape carrier package semiconductor device having a tape carrier and semiconductor elements that have been packaged on the tape carrier so as to drive the liquid crystal panel, [characterized in that] wherein said tape carrier comprises:

an insulating tape,

a metal wiring pattern installed on one surface of the insulating tape,

a through hole that is provided in a manner so as to penetrate the insulating tape so that the insulating tape is allowed to bend,

only a first insulating protective film for insulating and covering the metal wiring pattern and the through hole on the metal-wiring-pattern side, [and]

a second insulating protective film for insulating and covering the through hole on the side opposite to the metal-wiring-pattern side, and

resin for sealing periphery portions at which the semiconductor device and the metal wiring pattern are connected,

wherein the first and second insulating protective films are made of solder resist whose young's modulus is in the range of 5 kgf/mm<sup>2</sup> to 70 kgf/mm<sup>2</sup>, and only the first insulating protective film insulates and covers the metal wiring pattern and the through hole on the metal wiring pattern side.

Please add the following new claim:

-- 23 (New) A tape carrier package semiconductor device comprising:

an insulating tape,

a metal wiring pattern on one surface of the insulating tape,

a through hole provided in a manner so as to penetrate the insulating tape so that the insulating tape is allowed to bend,

only a first insulating solder resist protective film for insulating and covering the metal wiring pattern and the through hole on the metal-wiring-pattern side, and

a second insulating solder resist protective film for insulating and covering the through hole on the side opposite to the metal-wiring-pattern side,

wherein the first and second insulating solder resist protective films are made of solder resist whose young's modulus is in the range of  $5 \text{ kgf/mm}^2$  to  $70 \text{ kgf/mm}^2$ , and no insulating solder resist other than said first insulating solder resist protective film covers the metal wiring pattern and through hole on the metal wiring pattern side. --